haloalkyl, alkylaminoalkylcarboxy, aminocarboxamidoalkyl, alkoxyalkyl, perhaloalkyl, arylalkyloxyalkyl, and the like.

1. A system, comprising:

a radiation source configured to generate electromagnetic radiation for exciting an emissive species such that the emissive species produces a detectable non-steady-state emission during an emission time period of the emissive species, the emission time period being at least 10 nanoseconds;

a sensor configured to:

detect, during a first portion of the emission time period, a first emission from the emissive species, and

detect, during a second portion of the emission time period, a second emission from the emissive species; and

processing circuitry configured to identify a characteristic of the emissive species based on a difference between a property of the first emission detected during the first portion of the emission time period and a property of the second emission detected during the second portion of the emission time period.

2. A system as in claim **1**, wherein the radiation source, or a second radiation source, is configured to generate electromagnetic radiation for exciting the emissive species such that the emissive species produces a detectable steady-state emission.

3. A system as in claim **1**, wherein the radiation source, or a second radiation source, is configured to generate electromagnetic radiation for exciting a second emissive species such that the second emissive species produces a detectable steady-state emission.

4. A system as in claim **1**, wherein the radiation source is configured to generate electromagnetic radiation for exciting a second emissive species such that the second emissive species produces a second detectable non-steady-state emission during a second emission time period, the second emission time period being at least 10 nanoseconds.

5. A system as in claim **3**, wherein the sensor is configured to detect, during a first portion of the second emission time period, a first emission from the second emissive species, and to detect, during a second portion of the second emission time period, a second emission from the second emissive species.

6. A system as in claim **3**, wherein each emissive species comprises the same emitter.

7. A system as in claim **3**, wherein each emissive species comprises a plurality of emitters.

8. The system of claim **1**, wherein the emission time period is less than 100 milliseconds.

9. The system of claim **1**, wherein the emission time period is less than 10 microseconds.

10. The system of claim **1**, wherein the emission time period is less than 0.1 microseconds.

11. The system of claim **1**, further comprising an article associated with the emissive species, wherein the characteristic of the emissive species corresponds to a characteristic of the article.

12. The system of claim **3**, wherein the characteristic of the emissive species corresponds to the presence or absence of an analyte.

13. The system of claim **3**, wherein the characteristic corresponds to exposure of the emissive species to temperature, thermal history, pH, UV radiation, humidity, a sterilization technique(s), a chemical(s), a pathogen(s), a biological species, and/or mechanical stress.

14. A system as in claim **3**, further comprising a source of colorimetric signals.

15. A system as in claim **14**, wherein the colorimetric signal is associated with including images of the assay cartridge, markers that may be used for alignment, text, numbers, pictures, logos, bar codes, and/or QR codes

16. A system comprising:

a radiation source configured to generate electromagnetic radiation for exciting an emissive species such that the emissive species produces a detectable non-steady-state emission during an emission time period of the emissive species;

an electromagnetic radiation sensor configured to sense during a single exposure:

first emission from the emissive species during a first portion of the emission time period, and

second emission from the emissive species during a second portion of the emission time period; and

processing circuitry configured to identify a characteristic of the emissive species based on a difference between a property of the first emissions detected during the first portion of the emission time period and a property of the second emissions detected during the second portion of the emission time period.

17. A system as in claim **16**, wherein the second emission is a steady-state emission of the emissive species.

18. A system as in claim **16**, wherein the radiation source, or a second radiation source, is configured to generate electromagnetic radiation for exciting a second emissive species such that the second emissive species produces a detectable steady-state emission during an emission time period of the second emissive species.

19. A system as in claim **16**, wherein the processing circuitry is configured to identify a characteristic of the emissive species based on a difference between a property of the non-steady-state emissions and a property of the steady-state emissions.

20. A method for identifying a characteristic of an emissive species, comprising:

generating electromagnetic radiation;

exciting, using the electromagnetic radiation, an emissive species such that the emissive species produces a detectable non-steady-state emission during an emission time period of the emissive species;

detecting, during a first portion of the emission time period, a first emission from the emissive species, and

detecting, during a second portion of the emission time period, a second emission from the emissive species; and

identifying the characteristic of the emissive species based on a difference between a property of the first emission detected during the first portion of the emission time period and a property of the second emission detected during the second portion of the emission time period.

21-47. (canceled)

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